

J. Waldburg

TERMS—Three Dollars per annum, payable in advance.

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 **The Subscribers to the Southern Agriculturist are reminded, that the Price of the Journal was reduced to \$3, to all those who paid in advance;—those who are still in arrears for this and former years are respectfully solicited to make their payments.**

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The Southern Agriculturist.

(NEW SERIES.)

Vol. V.

FOR SEPTEMBER, 1845.

No. 9.

PRIZE REPORT OF EXPERIMENTS,
SUBMITTED TO THE STATE AGRICULTURAL SOCIETY, AT THEIR ANNUAL
MEETING, IN NOVEMBER, 1844.

Springfield, St. Andrew's Parish, Nov. 19th, 1844.

My Dear Sir :—Your letter of the 5th instant, with the request “to communicate, for public advantage, the results of my marl experiments the past year, with my general views; also, as to the mode of applying marl; its action on soils, and general utility;” I have not been able to answer before this; my excuse for the delay is, I am a candidate for the Ruffin premium offered by the State Agricultural Society; and a statement of the experiments to be forwarded to their meeting, which will shortly take place at Columbia, had not been completed until to-day.

As you are, (I believe,) a delegate to that meeting, I have concluded to send you the statement, with such additions as your letter calls for, and with the request that you will lay the same before the Society.

In all Agricultural Experiments, accuracy is the first and great requisite, in order to arrive at a true and correct decision; and though the experimenter be satisfied with the effect visible to the eye alone, the actual weight or measure, when brought in comparison, is the true test of its worth.

In all my experiments I have striven to be very accurate and precise, as it is of the utmost importance *to me* to be certain of the effects of this fertilizer.

I need scarcely now tell you, that my experiments have been so decidedly favorable to marling, that I am of opinion it will, in the course of a very few years, be generally used throughout our State. It will be the means of resuscitating and bringing into cultivation the thousand of old worn out fields which are every where to be met with.

So firmly convinced am I of its utility, that I have opened a pit seventy feet long by twenty feet wide; undergone considerable labor in removing the soil, which was from $4\frac{1}{2}$ feet to 7 in depth, before reaching the marl, and this for the most part a stiff clay, mixed with rocks, etc.—very hard to dig, and much more so to get clear from the spades and shovels.

I shall continue marling yearly, until every field which I cultivate receives a good dressing.

Many planters urge as an objection, the destruction of the old bed preparatory to broad-casting the marl, it being detrimental to the cotton crop of the next year. But I see no objection to spreading the marl in the alleys, and giving it but half the quantity the first year, and repeating the dressing the second year. This I have determined to do with my cotton fields in future, but with the corn and potatoes, I shall continue the broad-casting of the marl.

Very respectfully, your obedient servant,

FRANCIS S. HOLMES.

ROB'T. W. ROPER, Esq.

P. S. I have a statement of an experiment in baling and pumping water from the marl pit, and also of a successful experiment of one acre of marled corn, close planting—Georgia red-flint seed, which produced over 74 bushels, but have not time to send it. It was planted as a prize acre, and not included in my other experiments, therefore not necessary to be sent with them.

If you will honor me with a visit, it would give me pleasure to have you examine my marl pit, &c.

EXPERIMENT—(A.)—COTTON.

No.	Quantity.	Manures.	Product.
1	$\frac{1}{4}$ Acre.	Natural soil without marl or manure,	43 $\frac{1}{2}$ lbs. cotton in seed.
2	$\frac{1}{4}$ "	33 bushels marl, (66 per cent. carb. lime,) - - -	68 do. do.
3	$\frac{1}{4}$ "	4 cart-loads compost, and 33 bushels of marl, all broad-cast, - - -	131 $\frac{1}{2}$ do. do.
4	$\frac{1}{4}$ "	11 cart-loads salt-marsh-mud, and 16 bushels of marl under list, - - -	142 do. do.
			See App'x. A.

(B.)

1	$\frac{1}{2}$ Acre.	Natural soil, without marl or manure -	157 $\frac{1}{2}$ lbs. cotton in seed.
2	$\frac{1}{2}$ "	66 bushels marl, broadcast, - - -	178 do. do.
			See Appendix B.

EXPERIMENT—(C.)—CORN.

No.	Quantity.	Manures.	Product.
1	$\frac{1}{2}$ Acre.	Natural soil without marl or manure;	8 $\frac{1}{2}$ Bbls. ear corn.*
2	$\frac{1}{2}$ do.	8 cart-loads compost in 1843, for Corn, - - -	10 $\frac{1}{2}$ do. do.
2	$\frac{1}{2}$ do.	66 bushels marl, broadcast, - - -	11 $\frac{1}{2}$ do. do.
			See App'x. C.

EXPERIMENT—(D.)—POTATOES.

No.	Quantity.	Manures.	Product.
1	3 rows 105 ft. each in length.	Cowpenned, - - -	6 $\frac{1}{2}$ bushels.
2	3 do.	Cowpenned, and 33 bush. marl pr. $\frac{1}{4}$ acre, - - -	5 $\frac{3}{4}$ do.
3	3 do.	8 cart-loads compost, per $\frac{1}{4}$ acre, - - -	3 $\frac{1}{2}$ do.
4	3 do.	8 do. and 33 bush. marl pr. $\frac{1}{4}$ acre, - - -	4 do.
5	3 do.	Natural soil without marl or manure, - - -	1 $\frac{1}{2}$ do.
6	3 do.	33 bushels marl, per. $\frac{1}{4}$ acre, - - -	2 $\frac{1}{2}$ do.
			See Appendix D.

*The barrel in which this corn was measured is about the size of a flour barrel.

APPENDIX—(A)—COTTON.

Experiment A. Nos. 1, 2, 3 and 4. The field in which this experiment was made, has been at rest for some fifteen or twenty years, perhaps, prior to 1842; at this time, it was covered with a stunted growth of broom grass, and interspersed with a few loblolly or short leaf pines, and small live oaks. It was cut down, the broom grass burnt off, and a part of the field listed, bedded and planted in slip-potatoes, in June, which yielded a fair crop; the balance of the field, or hill, was not planted, (although listed,) until the following year, 1843, when the whole field was planted in Cotton, and the result was a lost crop.

The cotton began to rust in May, and by the middle of August the plants were black and leafless, except in a few spots, near the stumps of the oak trees. It did not average 10 lbs. of cotton per acre, nor grow higher than 12 or 14 inches. No manure was applied to any part of this crop, and no difference was perceptible between the part planted in slips, and that not planted the previous year.

The soil of this hill is a good sandy loam, but abounding in what we of the low country call iron ore. It is in small particles, and looks like fragments of rusted clay. Such soils are very common in this part of the State.

The entire field was listed, or rather levelled, (except $\frac{1}{4}$ acre, No. 4,) on March 9th, 1844; this was done with the hoe, and immediately afterwards, carted and spread broad-cast, 24 cart-loads of marl per acre. (The carts are drawn by one mule each, and carry 5 or 6 bushels, which gives an average of $5\frac{1}{2}$ bushels for every load, or 133 bushels per acre.) Omitting of course No. 1, and carting but 16 bushels to No. 4, which had the 11 cart-loads of salt-marsh-mud previously spread in the alleys, and upon this mud the marl was also spread, and then immediately listed upon.

It was all bedded, April 2nd, and planted in cotton, (fine Sea Island,) on the 4th.

The following remarks are taken from my plantation book, and were made at the times noted.

May 12th. Great difference in favor of the marled cotton generally—which can be distinguished to the row; it is taller and more healthy. The season is very dry, and all the crops are suffering much, but the marled land less than the unmarled.

June 3rd. In company with two friends, (Planters,) examined the entire crop, and their opinion, that the marled crop in every instance, is at least 30 per cent. superior to the unmarled.

June 7th. Blossoms in No. 3, Experiment A.

11th. Still very dry! The unmarled $\frac{1}{4}$ acre, No. 1, is suffering very much, looks yellow and sickly.

July 4th. Accompanied by two other friends, examined the crop and found the marled cotton far in advance of the un-

marled. The marled cotton is green and healthy, and the unmarled quite yellow and sickly, and is not by one third the height of the former.

- August 2d. Picked the first boll of cotton from No. 4.
15th. Began to pick cotton generally from the whole field—but there is very little open in No. 1.
Sept. 19th. The $\frac{1}{4}$ acre, No. 1, appears to be perfectly dead. The other portions of the field are also casting their leaves, and looking like winter—but No. 3 and 4, less so than the others. There is a good blow in the whole field, (except No. 1, from which all that could open has been picked,) but the plant appears to have made its last effort, and opened the pods up to the top.
Sept. 21st. Picked through this field, which is the last that will be got from it.
Oct. 7th. Picked in the few remnant pods from Experiment A.

APPENDIX B.—COTTON.

Experiment B. Nos. 1 and 2, was made on land that has been under continued cultivation, to my knowledge, eight years, and from what I can learn, has been planted nearly every year in the last sixteen or eighteen. I have planted it four successive years in corn, viz: 1840, 1841, 1842, and 1843, and manured each year with a slight dressing of compost, and sometimes cotton seed was added in the hills. The soil is a good yellow sandy loam, such as is considered good cotton land, and has produced about 15 or 18 bushels on an average per acre.

In the preparation and cultivation of this experiment, it was treated in the same manner as A. The rust appeared in various spots over the entire field in which the acre stands, quite early in the season, and was first seen in B. No. 2, which is the marled half acre. I attributed it then to some irregularity in spreading the marl, by which some spots were left without any—but on a visit made to me by two experienced James' Island Cotton Planters, who examined this experiment, they informed me that the best land on their Island, exhibited in spots the same appearance, and it was considered a prematurity of the plant, and not the *genuine rust*, as many believed. It was also their opinion, that No. 2 was far superior to No. 1, more advanced, and of a better bearing color.

The result has been $20\frac{1}{2}$ lbs. the half acre, or 41 lbs. per acre, in favor of No. 2, the marled half acre.

APPENDIX C.—CORN.

Experiment C. Nos. 1, 2 and 3. The field in which this experiment was made, is in every respect like that of B., as it is a part of the same field, separated only by a road. The half acre No. 2, was manured with 8 cart-loads of compost in 1843, and planted in corn. Nos. 1 and 3, were not manured with compost, but with

cotton seed in the hill, and likewise planted in corn—the yield was a good one, but I do not remember about what quantity.

The stalks of this corn were listed March 5th, 1844, and immediately the 66 bushels (12 cart-loads) of marl was broad-cast over the half acre No. 3; the whole was bedded with the Davis plough, by running one furrow on each side of the list, and the corn planted the same day.

From the time this corn attained its fourth leaf, a difference in favor of the marled half acre was visible to the row—and I have it noted on the 10th of May, when the crops generally were suffering for want of rain, the No. 3 was one-third higher than Nos. 1 and 2, and of a healthy green color; No. 1 was quite yellow and much twisted, and No. 2 a shade better than No. 1. In this state they continued until the rain of the 21st of May, when a gradual improvement was visible in No. 1, and No. 2 grew off rapidly, but a considerable difference in favor of No. 3 could at all times be perceived.

When the silk from the ears of Nos. 1 and 2, was green and pink, that of No. 3 was brown, indicating a maturity of the grain. The blades of No. 3 could have been stript several days earlier than Nos. 1 or 2, but I preferred taking them all in from the different Nos, at the same time, because a difference in the product of corn, it has been supposed, was caused by stripping the blades.

In harvesting, I found the ears of No. 3, better filled on an average than Nos. 1 or 2.

APPENDIX D.—POTATOES.

Experiment D., Nos. 1 to 6. The field in which this experiment was made, has been at rest three years, and when taken up for cultivation in the spring of this year, (1844,) was covered with broom grass. It is a good and grateful soil, of a yellow sandy loam, but very poor from excessive cultivation. After ditching it thoroughly, (for the surface is uneven,) the cow-pen was passed over a portion of it, and the compost and marl broad-cast over also; after which, on the 13th of March, it was all listed, and a furrow run on each side of the list, with the barshear plough, covering up the same. It was bedded with the hoe on the 1st of April, and planted with cut potatoes on the 3rd of the same month.

In consequence of the drought, they came up irregularly and grew slowly; but in no other experiment was the effect of the marl so marked.

The superiority of Nos. 2, 4 and 6, on the 3rd of June, was so decided, that it was the opinion of several gentlemen, who saw the field on that day, that two acres could be supplied with vines sufficient for slip-planting, from the $\frac{3}{4}$ ths of an acre, say Nos. 2, 4, 6. On the other hand, but few vines could be found in the unmarled Nos. 1, 3 and 5, that had crossed the alleys. The marled alleys were covered with vines.

On the 15th of July, no difference could be seen in Nos. 1 and 2.

I tested the yield of the different quarter acres or Nos., on the 18th of October. I could not dig in the entire quarters of each number, as these roots do not keep well, and the loss would have been considerable. We generally dig them as required for use. I therefore dug three rows from the centre of each quarter acre, or separate No; each row is 105 feet long.

The cow-penned quarter, No. 1, although producing a larger quantity, the potatoes were not as fine as those of No. 2. I selected several that weighed a trifle over three pounds each, but could not find one in the No. 1, that exceeded $2\frac{1}{4}$ lbs. It never occurred to me, until too late, that I should have weighed the whole. I took several of the largest to Charleston, where I reside in summer, to present to my friends, and it was then that I was induced to weigh them.

Discovery of digging and carting the Marl.

In a low part of an old inland rice-field, with an auger attached to a long rod, I attempted to bore, in hopes of finding marl, but did not penetrate two feet before I was compelled to desist, on account of the rocky state of the ground; these rocks are very numerous on the surface also—many of them bearing the impression of shells. Upon digging five feet deep, I found the marl, but as it was in swamp land, the water springs very fast, and therefore it was abandoned.

On an old causeway, which crosses a creek that passes through the plantation, I found two old shark's teeth. These teeth are quite numerous in the marl banks on the river, and I concluded that marl could not be far from the surface. I accordingly dug a hole about 3 feet square, in a narrow branch which leads from the creek, and which is overflowed at high tide, and struck the bed $4\frac{1}{2}$ feet from the surface, and not at all troubled with water; the rocks also appeared to lie in one stratum, and not scattered throughout the upper soil, as was the case in the old rice field.

With two fellows, (prime hands,) I began on Monday the 26th of February, to remove the earth off the marl in this pit, which I marked out 20 feet square; and the labor was not greater than in ditching in a fair soil; but on reaching the stratum of rocks, (a layer of about one foot thick intermixed with stiff blue clay,) the pick-axe had to be used to loosen it sufficiently to allow its being taken in the shovel, and then it was with much difficulty handled.

I can give no better idea of the labor of removing this stratum of rock and mud, than by saying, it took as long to remove it, as all of the other four. The pit was clear and ready for working on Friday at 1 o'clock; thus taking nearly five days, during which time no rain fell.

The earth which was taken out, was thrown across the branch, so as to form a bank to keep out the tide.

The following table will show the nature of the soil removed from above the marl, &c., &c.

1st	Stratum, marsh-mud and roots,	1 foot
2.	do. white sand and a few pebbles,	0 " 3 inches.
3.	do. Rocks, closely embedded in stiff blue clay; these are of irregular shape, filled with holes and the prints of shells. In size, they are seldom larger than a whole brick, but generally about as large as a man's fist,	1 " 3 inches.
4.	do. Dark sand, lumps of blue clay and pebbles,	1 "
5.	do. Blue and gray sand, with a large quantity of finely divided shelly matter, and numerous muscles, clams, and other shell casts in marl, with fish bones and teeth,	4 " 6 inches.
6.	do. Rich marl, of a dingy yellow color, which by analysis of Dr. Lebby, U. S. A. (Fort Johnson,) was found to contain 71 per cent. Carb. Lime,	2 "
7.	At this depth, (2 feet) the marl changes color, and contains but 61 per cent.	

Into this I have dug 5 feet; 7 from the top of the marl, and about 12 or 13 from the top of the marsh-mud or surface soil; the strength of the marl continues about 61 per cent.

I have been troubled but little with water in working this pit. Water oozes slowly through every part of the marl, but so gently as to be rather beneficial than otherwise, by keeping the marl moist and rendering it more easy for the grubbing hoes to penetrate.*

It is very firm marl, and requires a good blow to drive the point of the grubber two inches deep, when the handle, acting as a lever, crumbles it easily, or breaks it off in lumps, which are soon reduced by a slight blow with the butt end of a hoe or grubber.

At the depth of 13 feet, a prime hand, with a single toss of the spade, throws up the marl to the top of the causeway, where the carts are loaded; and in order to test the height to which it *could* be thrown, they were ordered to try and see how much higher than the causeway they could pitch it, when I found each of them could throw it five or six feet higher, but I would prefer erecting a scaffold and making two tosses, if I dig deeper than 13 feet, unless I found it easier to hoist by horse power.

On the causeway, where the carts are loaded, I keep an old fellow (a half hand) to assist in loading, and while the carts are away, he breaks up the lumps with the butt of his hoe, and hauls the marl into a heap.

* It does not take over ten minutes every morning to pump or bail out the water which springs into the pit during the previous night.

In carting the marl, I used two carts, each of which was drawn by a single mule; several cart-loads were measured, and they were found to average ($5\frac{1}{2}$) five and a half bushels per load. From several days carting (the particulars of which would be superfluous, and add much to the length of this already very long statement,) I have arrived at the following result as an average:

Distance, 600 yards—19 loads per day each, the carts to be drawn by a good strong horse or mule, and driven by a prime hand. The loads are not tilted out of the cart, but are divided into three heaps and drawn out by a hoe; these heaps are made at regular distances over the land, and insure an equal distribution of the marl, which is too heavy to spread far with wenchers. Three hands will be required to dig for two carts, and, as already stated, they must be *prime hands*.

Estimated cost of marling seven acres of land, &c.

With two carts, average distance 600 yards, it took five days to cart 168 loads, which gives each acre 24 loads, $5\frac{1}{2}$ bushels each—924 bushels at 1 cent and $\frac{3}{4}$ of a cent per bushel, \$12.38

Say 5 days work of 2 carts and mules, at 30 cts. per

day each, - - - - - 3.00

3 days work of 3 fellows to dig at 30 do. 2.70

2 do. do 2 do. do. 30 1.20

5 do. do. 2 do. to drive carts at 30 cts. ea. 3.00

5 do. do. 1 old hand, (half) in loading

carts, at 20 cents, - - - - - 1.00

One-half of the cost of removing the soil from the pit, }
and preparing the same before digging marl, 2 }
hands 5 days, at 30 cts. each, 3.00—half of which is } 1.50 12.40

The cost of each acre for 132 bushels, at 1.34 cts. is \$1,76 6-7.

THE ETRURIAN WHEAT.

[We have received the August Number of "*the American Farmer*," in its new shape, (large 8vo.)—which we highly approve of for general use, and as more likely to be preserved for binding in a volume, which will aid in making up a Farmer's Library. From it we copy the following article on the Etrurian Wheat—as it may be of interest to the growers of wheat in the upper parts of this and the adjoining States. *Ed. So. Ag.*]

We would call the attention of farmers to the advertisement of Messrs. Boardly & Cox, on our last page, offering for sale a lot of the wheat of a variety termed "Etrurian," noticed in our last as having been raised by Rev. D. Zollickoffer, of Carroll Co., Md. from seed imported by Com. Stewart, and raised on his farm in New Jersey. We have full confidence from what we have learnt of this wheat, in its value, and strenuously urge upon our farmers to obtain some of this seed, if ever so small a portion, in order to give

it a trial ; and as the lot on sale is small, to prevent disappointment, no delay should be had in the application, as it will no doubt be speedily disposed of. It is an early white wheat, as early as the Mediterranean, but not bearded—not subject to rust or smut, and so far as four years experience has gone, not subject to be injured by the “fly.”

Since the above was prepared, we have received the following from Mr. Zollickoffer :

Lauderdale, July 21st, 1845.

Dear Sir,—Enclosed you will find a few of the remarkable *beards* or awns of a variety of wheat of which I made mention when I was with you last. This with several others I received from H. M. Zollickoffer of Philadelphia, who received them in a distribution made by the councils of that city of various specimens collected for Gerard College. Nearly all of them failed from their late ripening. One variety of Spring wheat (labelled Italian) I still retain for further trial. It is a bald or beardless wheat—it is of a compact headed variety (*Triticum compactum*) and may yet prove valuable. The above long bearded wheat resembles somewhat in its *ear* and *awns* a variety of turgid wheat (*Triticum turgidum*) I received four years ago from England, but differs very materially in the form and appearance of the grain. This turgid wheat with two other varieties, subsequently obtained from Lincolnshire, England, with an expectation of getting a kind that would answer for cold clays, were all given up because of their late ripening. I go in for early wheat; hence my preference for Mediterranean and Etrurian. The Etrurian especially I regard as an important acquisition to the wheat grower. It has also the advantages of the early varieties—escaping rust and smut, and is, to say *the least of it*, as productive as *any* variety I ever grew, and more so than any of the white I ever tried. It has moreover maintained its *color* better than any other white variety I ever tried ; as white with me have turned red in one season. But to go back again to our long bearded variety ; I had given it up with others—three heads were found among the Etrurian by my youngest son, and perfectly ripe at the time of cutting that grain. How it got there is more than I can tell. I am disposed now to give it another fair trial. The awns I send you as a mere curiosity. When I get a little more time I want to notice that valuable paper of Mr. Naill's. There has been *too little attention* paid to the proper *time and manner* of putting in our wheat crop. I don't mean by “too little attention,” too little pulverizing the earth—The fact is, in many instances we pulverize too much. In this we follow British husbandry in a case that does not suit our climate, and attribute our failures to any thing else other than the real cause.

My son has just measured one piece of ground on which was grown Etrurian wheat, the product of which we know, having thrashed it by itself, the result about twenty-eight bushels per acre.

In this piece there are some twenty large apple trees and a large cherry tree. Any person acquainted with the *condition* of the *ground*, would pronounce this a larger produce than could have been expected from any other kind of wheat. I am satisfied that it is five or six bushels per acre more than the Mediterranean grown along side of it under equal circumstances.

Respectfully yours,
DANIEL ZOLLICKOFFER.

IMPROVEMENT IN AGRICULTURE.

The great improvement made in agriculture in Britain are often spoken of, and it may be interesting to some to know what they are. We therefore propose, occasionally, to lay before our readers some of the most prominent ones, and leading to the most manifest results.

To the slow and cautious farmers of this country, many of them will appear strange—and we will not find fault with such men, if they pronounce them incredible. But they are nevertheless, recorded facts.

The first is a letter in the Farmer's Magazine, London, from a gentleman who had purchased a farm of 130 acres, in Essex, for £3,250, and he states he has already expended £5,200 in permanent improvements—about \$26,000. The result is not given, as the improvements have but just been completed, and among them between 80 and 90 miles of drains, being four yards apart and 32 inches deep.

In 1799, Arthur Young said in his report on the improved state of the farms in Lincolnshire, which had been produced by ten year's labor in embanking and draining, and which occupy between 20 and 30 square miles of country—"Its produce before was small—letting for not more than 1s. 6d. per acre, but now from 11 to 17 shillings an acre." Another fen was made, by draining, worth £20 an acre, which had before been only worth £3—and the rent raised from 7 to 20 shillings; and he adds, "there cannot have been less than 150,000 acres drained, and improved on an average, from 5 to 25 shillings an acre."

We continue our quotations from the same author. In speaking of drainage in other parts of Lincolnshire, he says of land which before was good for nothing, that, "though the expense had been estimated at £400,000—its value was rated at £2,000,000, leaving a profit of 1,600,000 to the proprietors.

The same writer mentions another tract of land of 17,000 acres, which "before draining was worth but from 1s. to 3s. 6d. per acre—now it is from 10 to 30s." We might go on quoting from this writer, instances of the same nature to almost any extent. But these only show that the soil is improved, from the fact that the

higher rent could not be had unless the land had increased in productiveness. But the benefit is not all on the side of the proprietor. The tenant is glad to pay the increased rent, and finds his interest in it, as the following will show :

"The parish of Limber, 4,000 acres, was formerly let to four tenants, at 2s. 6d. per acre, and all four became bankrupts. It has been enclosed—is well farmed, and at the present rent the tenants are doing well. In some instances, considerable fortunes have been made."

In many cases the tenants join with the proprietors in the cost of improvements, and in some cases even make them alone. One instance is cited where the annual bill of the tenant for bones was from £1,500 to £1,800. "He died a few years since, and left a fortune."

Mr. Pusey, in his report on the agriculture of Lincolnshire, before the Royal Agricultural Society of England, records the following remarkable fact. The gentleman with whom he was journeying, pointed out to him a pillar seventy feet high by the roadside.

"It was," says Mr. Pusey, "a land lighthouse, built no longer since than the middle of the last century, as a nightly guide over the dreary waste which still retains the name of Lincoln Heath, but is now converted into a pattern of farming. This Dunston pillar, lighted no longer time back for so singular a purpose, did appear to me a striking witness of the spirit and industry which in our days has raised the thriving homesteads around it, and spread a mantle of teeming vegetation to its very base ; and it was certainly surprising to discover at once the finest farming I had ever seen, and the only land lighthouse that was ever raised. Now that the pillar has ceased to cheer the wayfarer, it may serve not only as a monument of past exertions, but as a beacon to encourage other land owners in converting their dreary moors into similar scenes of thriving industry. Within living memory it was by no means useless : for Lincoln Heath was not only without culture, but without even a road. When the late Lady Robert Manners wished to visit Lincoln, from her residence at Bliholm, a groom was sent forward previously, who examined some tracks and returned to report that one was found practicable. Another family was lost in this heath twice in one night, in returning from a ball at Lincoln, and was obliged to remain upon the waste till morning."

Since 1823, one portion of this heath (no longer) has been occupied by one tenant, who has realized a large fortune ; and if such are the results under a heavy rent, what may we not expect from improved agriculture in this country where the owners till the soil and have no outgo in the shape of \$5 to \$7 for each acre for rent ? And what would our farmers think of farming, when, besides the rent, a capital of \$20,000 is required to carry on the operations ? But such is the case in some parts of England.

We shall close this article by quoting from an article in the London Quarterly Review, a passage on the subject of irrigation :

"Sir Thomas Ackland's farm of Clotsham, which hangs almost precipitously over the valley of Holnicote, at 1100 feet above the level of the sea, affords a good instance.

The name of Catch Meadow indicates the process by which this irrigation is effected. The ground is not reshaped by the costly process required for the irrigation of meadows that are naturally level, but 'shallow gutters are carried around the slopes of the shelving field, tier above tier; and no separate channel is required for carrying the water off, because after flowing over one carrier it is caught in the next below, from which circumstance the name is derived.' The ease with which these catch meadows are formed is remarkable. A field at Winsford, so steep that one could not climb it without the aid of hands, having been limed and planted with potatoes for two years, and overlaid with water-gutters along the slope, has been converted at a trifling cost, from waste, rough ground, worth 5s. an acre, to a field bearing perpetual grass, worth at least 40s. an acre; and Mr. Blake, of Upton, has brought less than 400 acres, which had not been let for £1 an acre, to produce £1200 a year, chiefly by catch meadows, which he formed out of moor land, and lets as summering ground to the lowland farmers.

[*Am. Quarterly Journal of Agriculture.*

PASTURES.

Land which is best adapted to pasturage, we think should never be ploughed. This rule is particularly applicable to moist grounds, and those situated on hill-sides and mountains. We have frequently noticed a great difference in the production of grass on hill-sides, owing entirely to one portion having been ploughed, and the other portion not having been ploughed. The grass on the unploughed part is always much the best. In many instances, it is almost impossible to use the plough on a hill-side, without rendering the ground liable to be washed and gullied by rains; but if it is sown with grass-seed without ploughing, the numerous fibrous roots of the trees and shrubs, will hold the soil together till it becomes thoroughly netted by the grass-roots.

The natural condition of land as it is cleared of the forest, is generally favorable to the growth of grasses, as may be seen by the readiness with which they come in and flourish; and we believe that no mixture or reversion of the soil can be made with any advantage, for the production of grass. Drains may be made if needed, to make the ground sufficiently dry. The use of the harrow, after the growth has been properly cleared off by the axe and mattock, will put the surface in a good state for the reception of clover and grass-seeds, or for a crop of small grain, if it should be deemed advisable to sow

one. Should young trees, bushes or sprouts, from the stumps, spring up, let them be cut out with the mattock; and should the grass die out, or mosses come in, a sharp-toothed harrow drawn over the ground, and seed sown in August or first of September, with a dressing of plaster, compost of muck and ashes, or rotted manure, will bring on a fine sward of good herbage. On lands naturally adapted to the growth of grass, the use of top-dressing, or a re-sowing of seeds, will seldom be necessary, for under a judicious course of feeding, the pasturage, instead of declining, will actually improve for several years. The occasional use of a light, sharp harrow, may however, increase the growth of grass, by preventing the sward from becoming "bound."

It is very important to obtain the best grasses and herbage plants for pastures. In making a selection, due regard should be had to the adaptation of the different species to climate localities. Some of our indigenous kinds are excellent, and perhaps best, their hardiness and nutritive qualities being considered. For the middle and northern States, one of the most valuable sorts is the *Poa pratensis*, sometimes called "Kentucky blue grass," the "spear grass" of the northern and eastern States. On rich soils, not too dry, particularly those of a calcareous (limestone) nature, its produce is remarkable. It starts very early in spring, and grows late in the fall, but being effected more by drought than some other kinds, does not always grow as much in the middle of the summer, though from the great tenacity of life in the roots, it seldom dies. It propagates itself by tillering, or by many lateral roots, as well as by seed, so that it spreads rapidly, and as other grasses die out, it soon covers the whole ground. Its nutritive qualities are comparatively but little destroyed by frost, and on this account it is highly esteemed for winter pasturage, in sections where but little snow falls. By keeping the stock from fields well set with this grass, so that it may make a good growth in the fall, excellent grazing is afforded to cattle and sheep during winter. Its leaves form a thick matted growth, the surface of which may be bleached a little by the frost, but the lower portion will be almost as fresh and green as corn, and will even in this condition fatten stock of any kind.

Another species of the same family as the above, and sometimes mistaken for it, is the *Poa compressa*, flat stalked meadow-grass, sometimes called "green-grass." It is more hardy, and is believed to be more nutritive than the *Poa pratensis*. It delights in warm loams, and is often very troublesome in the cultivation of wheat and other crops, and from the difficulty of killing it, it is generally considered a pest. Its produce is less than the before mentioned kind, but it is exceedingly nutritive, and much relished by cattle and sheep. Its stalk, even when the seed has ripened and fallen off, is quite green, and though it appears hard, animals always eat it greedily. It will grow in a colder atmosphere than any other grass we are acquainted with, is the first to start in the spring, the last to stop growing in the fall, and keeps greener than any other through

the winter. For the advantage it affords as an early "bite" for sheep, particularly for nursing ewes, it might be an object to appropriate a suitable lot for it, which it would not be necessary to cultivate for other purposes.

Several species of the *Agrostis* family of grasses are indigenous to this country. The "red top," called in Pennsylvania and some other sections, "herds grass," appears to be the *Agrostis vulgaris* or "bent grass" of the English books. In Massachusetts, there are cultivated two varieties generally known under the name of red top; one considerably larger and later in flowering than the other, and is better adapted to cold moist lands. The small kind is, however, held in great estimation for its nutritive qualities, especially for feeding working oxen, for which it is, in some districts, thought more valuable than any other grass. The large kind is generally most esteemed for pastures, as it is less affected by drought, and its growth is more constant through the whole season. On the whole, it is well worthy of cultivation as a grass for grazing.

Another species of *Agrostis* indigenous here, is closely allied to, if not identical with, the European "florin," *A. stolonifera*. It is a very nutritive grass, and is much relished by stock. It is, however, only adapted to particular locations. From its habit of extending itself by *stolonese*, or lateral roots, it is peculiarly valuable on loose, spongy, or boggy soils, on which it forms a firm sod that may be trodden by sheep or light cattle with safety. It is also the best grass which can be used for sodding the sides of open ditches, or water-courses, which it does so effectually that the banks cannot wash, and are not liable to be broken; they presenting, when set with this grass, a beautiful smooth green turf, most agreeable to the eye.

Phleum pratense, "meadow cats-tail," "timothy," or the "herds-grass" of New England, is much cultivated in this country for hay, of which it produces a great yield, and where the ground is rich and moist, it may be very profitably introduced with other grasses in pastures. In some sections it is pretty extensively used for this purpose. It is a native of this continent, and was brought into notice in England by Timothy Hudson, about the year 1780, according to Loudon.

Of the clovers, there are two or more species indigenous to this country, viz: the white, or "Dutch clover," *Trifolium repens*, and a kind which we have not found in any botanical catalogue, called in the western part of the country, "buffalo clover." The latter is perennial, resembles the common white clover in the color of its blossoms and habit of growth, and in the height and size of its stem, is a medium between the white and the common red clover. The common white clover is usually much esteemed for pastures, combined with the grasses, but is thought not so valuable by itself, as it is deficient in quantity, and too much relaxes the bowels of animals when feeding on it.

There are a few grasses and herbage plants not commonly cultivated in this country, which it would be desirable to have introduced

and fairly tried. The "orchard grass," *Dactylis glomerata*, is grown in a few sections, but is not generally known. As a pasture grass, it is worthy of more general culture. It produces abundance of leaves, starts very quick after being eaten off, and grows very rapidly. It should be sown thickly, (three bushels seed per acre, is recommended by English writers,) to prevent its growing up too much in bunches or tussocks.

The perennial rye-grass, *Lolium perenne*, is recommended for sheep pastures. We have tried this grass, and think highly of it for this purpose. The meadow fox-tail, *Alopecurus pratensis*, is well suited to moist pastures, and in England is esteemed one of the best of grasses, both for grazing and hay.

The sainfoin, *Hedysarum onobrichis*, is considered one of the most valuable herbage plants known in England. It belongs to the leguminosæ family, but is in many respects quite different from any of the clovers. It is said to grow spontaneously on the calcareous mountains of the middle and south of Europe. It flourishes well on dry soils, and by means of its long fibrous roots, is said to find moisture even in the driest seasons. It is much esteemed both for pasturage and hay, and is said to afford on some soils a greater amount of nutriment per acre, than any other plant grown for those purposes. It is also recommended for keeping the sides of hills from washing. The roots will live in the soil, and retain their vigor many years.

A species of clover called in England, meadow-clover, sow-clover, or cow-grass, *Trifolium medium*, is perennial, and is much esteemed in pastures. It resembles in appearance, the common biennial red-clover, *T. pratense*, but the leaves are narrower, and it grows to a less height. It is very desirable that this plant should be tried in this country. "A poor sandy soil it is said, will produce a good crop of cow-clover, that would not produce half a crop of the common red-clover."—Loudon.

Several species of the *Trifolium* genus pass under the common name of *trefoil*. The most valuable of these is thought to be the French yellow trefoil, *Medicago lupulina*. It is perennial, or at least lives many years. It is well relished by stock, both in its green state, or when made into hay. It is thought of considerable consequence in pastures.

[*Albany Cultivator*.]

DRAINING LANDS.

I propose to note a few facts, the result of my own observation and experience, on a subject which I conceive to be of vital importance to the farmer's interest. Everybody knows that *standing water is death to all useful vegetation in this climate*: this fact I hold to be sufficient proof of the utility of draining. The draining of marshes, swamps, and low meadow land, tends, also, to ameliorate

the climate of a country, and render it more healthy, and the influences of the atmosphere more favorable.

To reap advantages from draining, like other branches of farming, it must be well done. Cut good, wide, deep ditches into the subsoil, if there is descent enough to carry all the water off, but by no means so deep that you form a tank to hold water. If your neighbors's land is higher than yours, cut a deep ditch along the line fence, if practicable, and parallel with it, and thus arrest water that would otherwise flow on you, and irrigate land that would be better without it. Abandon the idea that by cutting so many ditches here and there, you are wasting just so much land: this impression is decidedly erroneous. By drying the remainder, you render it more light and porous, easier of cultivation, and consequently more productive.

In the month of July last, I observed from my window two mowers cutting a small lot of coarse bog grass, on land so wet that they could not keep dry feet. They complained of the crop as hardly worth the cutting, except perhaps for yard litter, or very ordinary cow fodder. Now I happen to know that this very identical spot of ground was thoroughly and effectually drained a few years ago, a good deep ditch being cut entirely around it; and that season and the one following, the most valuable crops of grass were taken from it I ever knew before or since. But you ask, "Why has no good crop come from it since?" I will tell you. The draining was done, and I am satisfied, *well* done; but this is not always sufficient. If farmers would be permanently benefited by draining land, they must keep the ditches well cleared out, that the water may not only pass off, but pass off quickly; and after a ditch is well opened, a little labor every season will suffice to keep it so. Now, in the above instance, the ditches were never opened but once, consequently they soon became filled up again; and the trouble is, the owner would rather *drain his glass of brandy* than his meadow, which kind of *draining* he understands perfectly; but, allow me to add, that kind of draining wont answer for farmers, and if he had as effectually drained his meadow, a large increase of good hay would annually have been added to his store.

Draining has done wonders for me, and I only wish the anti "book farmers" and all doubting minds could visit my nursery, and *see* it, instead of hear tell of it. A few years ago, I came into possession of a few acres of a cold, neglected, stiff clay soil, with a retentive yellow clay subsoil, so wet that we often could not even *plough* the ground until many of our neighbors had *planted* theirs. A very uninviting spot for a nursery, you will say. It really was; but as it was the *best* I had, I had to make the *best* of it, and if every farmer would make the *best* of what he has, we should have far less complaining, less discontent, and less of the "western mania."

I soon conceived the necessity of thorough and complete draining this wet field, and accordingly employed two hands and one head, which were *my own*, and set to work, cutting good wide ditches all

around and through it, and set it to "bleeding at every pore"—making "blind ditches" of those that ran across the lot, that I might plough over them. The result is, that I have now healthy and thrifty fruit trees growing on land that was much of it wet bog holes, and we are enabled to cultivate it in good season, weeks earlier than ever before. A single fact will show the importance of draining such land. One ditch runs directly through a low marshy bog-hole (that was,) cut deep into the subsoil, the pores of which were filled with water, and the deeper I went the more the water would ooze out. This very spot is now quite dry and mellow, beautiful to work in, and is the richest spot of ground in the whole nursery. My neighbor's land, which joins me, is higher than mine, and sloping towards it; consequently all the surface water is washed from his upon mine. This communication I cut off by making a ditch near and parallel with the line-fence; this answers the desired purpose, and is a benefit to both of us. His land is so peculiarly situated that he can drain to little purpose, unless he turns his drains into mine, which have a free outlet. This I cheerfully allow him to do, and he is now draining to some extent, and intends to do much more.

I do not conceive it necessary to lay down any very definite rules on paper, for draining land; as the length, breadth, or depth of a ditch; the direction in which it should run, &c. Every farm is differently situated. One is high ground, perhaps, best suited for blind drains; another is low ground, and suited for open ditches. A certain course pursued on one farm, will not answer for another. Every farmer in this, as well as everything else, should exercise his own judgment, and adapt his efforts to circumstances.

W. D.

Morristown, N. J.

[*Am. Agriculturist.*]

EVAPORATION OF MANURES—BERMUDA GRASS.

Mr. Camak :—I noticed in the last No. of the Cultivator, a communication on the subject of "Manures—do they sink or evaporate?" Now I am fond of theory which leads to practical demonstrations; but when the latter confute the former, I am compelled to yield. In regard to manures, you may take a plat of ground in the form of a basin, (which certainly would be the best location,) to test the point. Place a sufficiency of stuff on it, that, if converted into manure, by the quickest process possible, would form a coat one foot thick over the whole surface. Now I will venture to assert, that if you let it remain in the basin until fully decomposed, it will not be two inches thick. Dig now in the soil and you will find it the same depth as before, with the addition of the manure. Now will Mr. 'Salamander' tell me what has become of the balance, if it

does not evaporate? My experience as a practical farmer for about thirty years, has taught me that manure always rises and never sinks. In my early days I cultivated poor pine land, and made considerable manure, ploughed shallow and manured in the hill. My reasons:—In the first place, the land was shaded by the trees, and the fall of the leaves (or straw) and grass created a sort of soil, which, until it was exhausted by being exposed and cultivated, produced tolerably well. As soon as we passed through that soil, it became a continuation of coarse sand. After manuring in the hill, let there come a heavy rain, and you would find a large portion of your manure in the middle furrow. This every piney woods farmer knows. Try the experiment of digging where you have manured heavily; get below where you have ploughed, and you never find your manure, nor any of the effects. The land being porous and heavy, the manure light, all the valuable properties are lost by the action of the sun.

My next experiment was on an old farm in the county of Wilkes. Here I had lands that once were very fertile, but were almost destroyed by skinning. In fact, I inquired of several farmers how they could tell how much they had in cultivation, as there appeared to be as many acres in sedge as were cultivated in the same field. My first object was to procure some of Freeborn & Hitchcock's cast iron two horse ploughs; the next was to get a large shovel with a wing on each side, similar to the turning scooter, the only difference being, mine was large with two wings, cleaning the furrow out well, drawn by two horses, as deep as they could pull it. Then I placed all the rough manure I could get in my stables, and corn stalks trod to pieces in my lot, in those furrows, bedding on it deep with the two horse plough, (the cast iron plough.) My neighbor's objected to my manure as not being sufficiently rotted. If dry, my corn would burn up they said; yet I made corn to sell. This was in 1818. I have used this kind of plough ever since, and though I may not have succeeded as well as some persons at a distance, I have generally made good crops and raised fine hogs. I have lived in this country for the last twenty-two years, and have not one foot of sedge land on any that I opened myself. I have purchased several farms that have some sedge on them.

But sir, in stating my own experience in farming, I have necessarily left a part of the first question behind—does manure sink or evaporate? When I got on the clay lands I ploughed deep. Was it because it had a foundation that would not let the manure sink? No. I had a soil, which, although exhausted, was fine and susceptible of improvement, on account of its firmness, and not so likely to suffer by evaporation. I used manure in its rough or new state, because it had not lost two-thirds of its value by evaporation, (which is the kind we farmers call well rotted.) I used that sort because it will go three times as far, and do about the same good. I ploughed deep to prevent evaporation and to retain moisture, and enable me to plough my crop well. Now, in concluding the subject, I will

ask any candid man, for his own satisfaction, to dig a hole (or pit) on any kind of soil, (where it has been manured the best,) and see if he can find any appearance of manure below where it has been ploughed. I would go farther, and invite the chemist to test it, and then try the same quality of soil at the same depth, and I am well assured that they will agree with me that manure never sinks but evaporates.

Perhaps I ought now to quit; but there is another subject I must speak of: and that is Bermuda grass. I see it recommended by a number of intelligent gentlemen, (I cannot say farmers.) I have been acquainted with it for twenty-seven years, and have had a good deal to do with it, and think I ought to be somewhat acquainted with it. I look upon it as the worst curse a father could pronounce upon his son, to leave him a farm stocked with Bermuda grass. To old men I have nothing to say on the subject. Let them try it if they see proper. But to young farmers, let me exhort them not to be led away by the favorable opinions of others, who, I would hope, recommend it after a very partial acquaintance, but to examine some of the many fine fields in Georgia which have been and will remain cursed with it to the end of time.

Newton Co., July 1845.

A CORN MAKER.
[*Southern Cultivator.*]

SULPHURIC ACID.

Mr. Breck:—I have noticed in your columns recently, extracts from English papers, intended to show the great advantage which results from the new discovery of dissolving bones in sulphuric acid, for manure. I am not disposed to call in question the great utility of the process, *if* its effects are so marvellous as represented; though I cannot readily see what property this sulphuric acid possesses, that can cause it to act so favorably on the soil. Perhaps some of your chemical friends can enlighten me on this point. But my present object is only to say, by way of caution to any one who may be disposed to test this new process of manuring, and who is ignorant of the nature of sulphuric acid, (better known as *oil of vitriol*,) that I, for one, would not meddle with it in any case. However, I do not know that this caution is necessary, and do not presume there is much probability that any of our farmers will be inclined to try the new process, even if the bones and the vitriol could readily be had.

Let us make the best of our *old fashioned* manures, and increase them in amount as best we can; and I think we shall have no need of calling in the aid of such a dangerous agent as oil of vitriol, even though (as represented) it will make *three* bushels of bone manure

as effective as *sixteen* without it—a result which I can wish all may realize who are inclined to test the new process.

Let me add that I am not sufficiently acquainted with the properties of sulphuric acid, to warrant me in saying anything for or against it *as a fertilizer*—but that it is a dangerous thing to handle, is generally known, and, I presume, indisputable.

Yours, with respect, S. S.
[N. E. Farmer.]

WHENCE DO ANIMALS DERIVE THEIR FAT.

The theory has lately been put forth by some European chemists, that such plants only as contain oil, or the elements of fat, can fatten animals. A late number of the Quarterly Journal of Agriculture, contains an article translated from the French, on the "fattening of cattle, and the formation of milk, by M. M. Dumas, Boussingault, and Payen." In this article, the theory above mentioned is strongly and elaborately defended. It is obvious that the subject involves a matter of great practical importance, viz: that of selecting the proper plants for the fattening of animals and the production of butter. The researches of the chemist and the philosopher, may be of service in deciding this point, though it appears to us that in the adoption of new theories, we should be careful that they are not opposed to well-established facts. A sensible writer has well remarked, that "perhaps nothing has done so much to discredit, amongst the mass of farmers, the probability of profitably making the science of chemistry available for the purposes of agriculture, as repeated assertions made by chemists, either at variance with, or only partially founded on facts." It strikes us that the article to which we allude, is in some particulars obnoxious to this charge.

In advocating the theory that animals have not been known to fatten on food devoid of fat, it is stated that hogs have not been known to fatten on potatoes! At the closing of the article, the writer gives a summary of the conclusions arrived at, among which it is laid down, "that potatoes, mangold wurzel, and carrots, only fatten so far as they are joined with products containing fat substance, such as straw, the seeds of cereal plants, bean, or oil cake." It will hardly be necessary to refer to particular cases to show that this conclusion is at variance with facts—the experience contradicts it. Are there not to be found many persons who have fattened animals on potatoes or carrots? We have often fattened animals on potatoes, with no additional food than such a quantity of straw or hay as was necessary to give proper distension to the bowels, and assist the animal to "raise the cud," and never saw better beef than from cattle thus fed. In some of the cases we have in mind, the whole quantity of food given, besides the potatoes, would not have been

sufficient to sustain the animal in ordinary condition. So in regard to hogs, we have known many cases where the accumulation of fat could be attributed to nothing else but potatoes. We cannot cite cases where potatoes were the *only* food given, but the quantity of other kinds would never have fattened them.

The experiment to which these French chemists refer in support of their theory, if well conducted in other respects, must, in our opinion, have been made with an inferior breed of hogs.

In a note attached to the article upon which we have made the above comments, is a remark in relation to the effect of carrots when given to milch cows, to which we wish to call the attention of our readers. It is said, "This sort of food [carrots] is reserved for those cows which are not so good milkers, and whose milk it is wished *still farther to impoverish*, in order that it may serve as a substitute for woman's milk." Now we would inquire whether anything like the effect here indicated, is known to follow the use of carrots for cows in this country? So far as we are acquainted, the effect of carrots is believed to be to make the milk *richer* instead of poorer.

[*Albany Cultivator.*]

BERKSHIRE HOGS.

Mr. Camak :—Sir—I promised you a while back that I would give you my method of managing Berkshire hogs to profit. In compliance with my promise, I herewith forward you my prescription, without any other preliminaries than simply to say, I got in possession of some Berkshire hogs about five years ago, and to be sure that I was not humbugged, I procured them of different stocks; which, from their recommendations and appearances, I supposed were all of the choicest breeds. From that time until now I have experimented with them in all sorts of fashions. I have fed them bountifully on all sorts of grain, grasses, peas, potatoes, fruits, vegetables, meal and slops, and I have fed them scantily; I have enclosed them in lots, and I have let them run at large; I have fed them by themselves, and I have fed them with other hogs; but in spite of my best personal efforts, I have lost at least thirty of them to one of my common stock, notwithstanding I have had, all the while, five times as many of the common stock as I have had of the Berkshire. They would die poor, and they would die fat; they were subject to all sorts of diseases, old and complicated, new and simple; they would take the mange, and they would become lousy; they would die suddenly, and they would linger to death.

What to do under the circumstances was of course a subject of much deliberation and inquiry. Had these things happened to the common stock, it would have been a matter of no great surprise: but it was the Berkshire hogs that were thus affected! To suppose them to be a humbug, as the signs seemed to indicate, would be to

stake my judgment against the generally received opinion of the people, and the positive declaration of many good men. That wouldn't do: I appealed to the sense of the enlightened to learn the cause. None could tell. I waited on the ignorant to know the reason; but they were ever strangers to the case. Whilst oscillating between the various conjectures of a bewildered mind, and conjuring up schemes to reconcile experience with the opinions and sayings of others wiser and better than myself, I was cheered by the reflection that there was one experiment more to be tried; and that I would try it. I did so; and it acted like a charm. I noticed the precise day on which the sows had pigs; if it was before or after the change or full of the moon, I noted it carefully in my memory; and as soon as the circumstances and age of the pigs would allow of it, I altered all the boars, spayed all of the sows, killed the hermaphrodites and knocked the old hogs in the head.

Judging from the time since this method was adopted, and the effects produced by it upon the stock, I am fully persuaded that this breed will soon pass away, and the sooner the better. Seeing the excellent results produced by this practice upon my hogs, I concluded to extend the benefits of my genius and discovery to my neighbor's stock. To this end, I gave orders to my folks, whenever they saw a stray Berkshire hog on any part of my land, they must hallow 'Berkshire!' as loud as they could squall. On hearing this word, as a signal, they must drop their business of whatsoever kind it might be, hasten to the place whence the signal proceeded, and never stop, hands nor dogs, until they altered or spayed the hog, as the case might be.

Newborn, June 1845.

JOHN W. PITTS.

[*Southern Cultivator.*]

DISEASES OF SWINE.

We have been presented by J. S. Siskner, with a valuable work, entitled "Every Man his own Cattle Doctor." It is a book that should be in the hands of every farmer, if possible. We make the following extracts from the work, and are certain it will be read with interest.—*Ed. Western Cultivator.*

It is only very lately that any persons have condescended to take into consideration the maladies of swine, and they are little understood. The diseases that have been recognised are not numerous, but they are exceedingly fatal; and that fatality is increased by the difficulty of managing these unruly animals.

The most frequent disease, and as fatal as any, is—

Inflammation of the lungs.—This complaint is known among the breeders and fatteners of swine, by the term of *rising of the lights*. There seems to be a peculiar tendency in every malady of this animal, to take on a highly inflammatory character. It is the consequence of the forcing system that is adopted in the fattening of the hog. It resembles the *blood* or inflammatory fever of oxen and sheep—a general and high degree of fever, produced on a system

already strongly disposed to take on intense inflammatory action from the slightest causes. Every little cold is apt to degenerate into inflammation of the lungs, in the fatted or fattening hog; and so many cases of this sometimes occur in the same establishment, or the same neighborhood—in fact among those who are exposed to the same exciting cause, that the disease is mistaken for an epidemic. There is no doubt that when this heaving of the lights begin to appear in a herd of swine, a great many of them are sooner or later affected by it and die. It is the cough or cold that is epidemic, but it is the plethora and inflammatory state of the animals that cause it to be so general, as well as fatal.

The early symptom is cough. A cough in a hog is always a suspicious circumstance, and should be early and promptly attended to. The disease is rapid in its progress. The animal heaves dreadfully at the flanks; he has a most distressing cough, which sometimes almost suffocates him, and he refuses to eat. The principal guiding symptom will be the cough getting worse and worse, and becoming evidently connected with a great deal of fever.

In many cases congestion takes place in the lungs, and the animal dies in three or four days: in others he appears for a while to be getting better; but there is a sudden relapse, a frequent dry husky cough comes on, there is little appetite, rapid wasting, and the hog dies in a few weeks, evidently consumptive.

The first thing that is to be done is to bleed, and the most convenient place to bleed the hog is from the palate. If an imaginary line is drawn from between the first and second front middle teeth, and extending backward an inch along the palate, and the palate is there cut deeply, with a lancet or fleam, plenty of blood will be obtained. A larger quantity of blood, however, can be abstracted from the vein on the inside of the fore-arm, about an inch above the knee. The application of cold water with a sponge will generally stop the bleeding without difficulty, or at least so far arrest it, that no harm will be done, if it should continue a little while longer. An assistant may easily open the mouth sufficiently for all this, by means of a halter or stout stick, but beyond this the swine is an awkward patient to manage. He will struggle obstinately against every attempt to drench him, and the inflammation may be aggravated by the contest. It will, therefore, be necessary in the majority of cases to endeavor to cheat him by mixing his medicine with his food.

Here he must recollect the nature of his stomach; it is not of that insensible character and difficult to be acted upon or nauseated as in the cow and the sheep, but it approaches as nearly as possible to the structure of that of the human being; and we must adapt our medicine accordingly. The emetic tartar must be omitted from our fever medicine, or it would sadly vomit the patient. The following may be given:—

Recipe (no. 1.) Fever medicine for swine.—Take digitalis, three grains; antimonial powder, six grains; nitre, half a drachm. Mix and give in a little warm swill, or milk, or mash.

In the greater number of cases the animal will readily take this : but if he is so ill that nutriment of every kind is refused, he must be drenched.

This should be repeated morning, noon, and night, until the inflammation is abated. A purgative should quickly follow, and we have those for the hog which are mild, as well as effectual, and from which no danger can result. The Epsom salts may be given in doses of from one to three ounces, and they will communicate a not unpleasant or unusual flavor to his broth or swill.

If this inflammation of the lungs in the hog, rivals in the speed with which it runs its course, and in its intensity and fatality the *blood*, or inflammatory fever of oxen and sheep, no time should be lost in adopting the proper measures, and the bleeding should be copious, and the medicine given in doses sufficiently powerful. When the disease lingers on, and the husky cough remains, and the animal is evidently wasting, medicine will be in a manner useless, and warmth and cleanliness, and food that has no heating quality, afford the only chance of cure.

Apoplexy and inflammation of the brain.—In distilleries, and where many hogs are kept, and too well kept, this is a very destructive, and not unfrequent malady. If the swine had been carefully observed, it would have been seen that they were making a more than usually rapid progress, but there was at the same time a laziness, or heaviness, or stupidity about them. A dose or two of physic would have removed this, and not have interfered with the fattening ; indeed they would have thriven the better after it. If this, however, has been neglected, the apoplexy probably will be established. The swine, in the act of feeding, or moving across the sty, will fall suddenly, as if struck with lightning. He will be motionless for a little while, and then convulsions will come on, strong and dreadful ; the eyes will seem protruded, the head and neck will swell, and the veins of the neck will be brought into sight, notwithstanding the mass of fat with which it may be covered. In the midst of his struggles the animal will be perfectly unconscious. He will often die in a few minutes, or should he recover, he will be strangely exhausted, and some internal injury will be evidently done, so that he afterwards will be very subject to returns of these attacks, either of apoplexy or of fits.

The course here is plain enough. He should be bled, and bled copiously. Indeed the blood should be suffered to flow as long as it will. Two or three ounces of Epsom salts should then be given : the quantity and heating character of the food should be diminished, and a couple of drachms of sulphur given daily in the first meal.

When apoplexy or fits have once appeared in a sty, they spread like wild fire. There is nothing contagious in them, but there is the power of sympathy acting upon animals become too disposed to inflammation and fever. The most forward of them should be disposed of as soon as possible.

The habit of fits once established cannot easily be broken, and the only way to prevent the continuance of much annoyance is to separate those that are oftenest affected from the rest, and to fatten them as soon as possible.

Measles.—This is an inflammatory disease, not always indeed discovered during the life of the animal, but plain enough after death, and very considerably diminishing the value of the carcass. The red and pimpled appearance of the skin, or of the cellular substance between the flesh and the skin, sufficiently marks the disease. It shows that there has been general inflammation, either resulting from the fattening process being carried too far, or much oftener, from the animal having too suddenly been taken from poor keep, and suffered to have as much as it will eat of highly nutritious and stimulating food. The measles are very seldom or never fatal, but the disease may generally be recognized by the pink blush of the skin, or of some parts of it, and by the hog rubbing himself more than usual, while the skin is free from pimples and scurf. The remedy would be a less quantity of food, or of not so stimulating a character, and occasional doses of Epsom salts or sulphur.

Mange.—Few domesticated animals are so subject to this loathsome disease as the hog, if he is neglected and filthily kept; but in a well cleaned and well managed piggery, it is rarely or never seen unless some, whose blood from generation to generation has been tainted with it, should be incautiously admitted. A mangy hog cannot possibly thrive well. His foul and scurfy hide will never loosen so as to suffer the accumulation of flesh and fat under it.

Except it is hereditary, it may, although with some trouble, be perfectly eradicated. The first thing to be done is to clean the hog well; without this, all external applications and internal medicines will be thrown away. The animal must be scrubbed all over with a good strong soap-lather, and when he is well dried with wisps of straw, he will be ready for the ointment, and no better one can be used than the Mild Ointment for scab in sheep (Recipe No. 14, p. 225.)* A little of this should be well rubbed all over him every second or third day; but at the same time internal medicine should not be omitted. There is no animal in which it is more necessary to attack this and similar diseases constitutionally.

Recipe No 2. Alterative powder for swine.—Take flowers of sulphur, a quarter of an ounce; Æthiop's mineral, three grains; nitre, and cream of tartar, half a drachm. Mix, and give daily in a little thickened gruel or wash.

This, like the scab in sheep, is a very infectious disease, and care should be taken to scour the sty well with soap, and afterwards to wash it with a solution of chloride of lime, as recommended at page 225. The rubbing post, that useful, but too often neglected article of furniture in every sty, should particularly be attended to.

* Take flowers of Sulphur, a pound; Venice turpentine, four ounces; rancid lard two pounds; strong mercurial ointment, four ounces. Rub them well together.

Sore ears.—There are very often troublesome cracks and sores at the back of the large lop-ears of some breeds. If there is any disposition to manage, it is most evident about the ears of these animals, and the mischief is sadly aggravated when brutes in human shape set every ferocious dog at the stray pig, the favorite hold of which is the ear. The Healing Cleansing Ointment of cattle (Recipe No. 10, p. 53*) will most readily heal the sores.

Pigging.—The sow usually goes with pig four months, but there is more irregularity in her time than in that of any other of our domesticated quadrupeds. A week or ten days before her pigging she should be separated from the rest, otherwise the young ones would probably be eaten up by them as soon as they are dropped, and if she shows any disposition to destroy them, or if she has ever done so, she should be carefully watched, a muzzle should be put upon her, and her pigs should be smeared with train oil and aloes as soon as possible.

The teats of the sow will sometimes swell, and hard knots may be felt them as in the garget of cattle. The treatment should be nearly the same, except that bleeding is scarcely requisite. A dose of physic, however, is indispensable. The Garget Ointment for cattle (Recipe No. 24, p. 69†) may be rubbed with advantage into the teats, which should be carefully wiped or washed before the young ones are permitted to suck again; indeed, they will not suck while any unusual smell remains about the teats. The milk should also be gently, but well pressed out of the diseased teats.

When it is wished to spay a breeding sow, in order that she may be up for fattening, it may be done while she is suckling. The young pigs may be cut at three or four weeks old; they should never be suffered to suck longer than two months; and they may be rung as convenient after weaning. No hog should escape ringing, even if he is destined to live in the sty. It is the only way to keep him quiet, and will contribute materially to his thriving.

Quinsy.—This disease in the hog is compounded of sore throat and enlargement of the glands of the throat, and is sometimes like strangles in the horse, inflammation and enlargement of the cellular substance between the skin and muscles under the lower jaw. The progress of the malady is rapid, and the swelling is sometimes so great as to prevent the breathing, and consequently to suffocate the animal. To a skin so thick as that of the hog, it is useless to make any external application. The patient should be bled; two ounces of salts should be given, and half-ounce doses repeated every six hours, until the bowels are well opened; while warm weak wash, or milk and water, should be occasionally poured into the trough. It is not often a dangerous disease if remedies are early adopted.

* Take lard, two pounds; resin, half a pound. Melt them together, and when nearly cold, stir in calamine, very finely powdered, half a pound.

† Take soft soap, one pound; mecurial ointment, two ounces; camphor, rubbed down with a little spirit of wine, one ounce; rub them well together.

[Gov. Vance, of Ohio, now in Congress, has been very observant of the diseases to which domestic animals are subject in that State and the west. These sheets having been submitted to his inspection, he answered:—

Washington, Jan. 22nd, 1844.

I have looked over the sheets enclosed relative to the diseases of hogs, and am convinced that what is termed "*quinsy*" in these sheets is the same disease we were conversing about the other evening at Mr. Seaton's. By careful attention to the early stages of this disease, if it is the same that affects our swine in the west, it will be found that they will become stiff in all their limbs, and will move with as much difficulty as a foundered horse, and with almost the precise symptoms.

When this is the case, we know of no cure but a thorough cleansing and opening of the ducts or holes in the inside of the fore-legs, which will give free respiration; this, with ashes and sulphur mixed with salt, or incorporated with the food, will generally effect a cure.

Kidney-worm.—There is a fatal disease amongst our swine in the west, called the kidney-worm, which causes a weakness in the back, and finally a falling of the hind quarters, which they will drag around for months, until they become the most loathsome objects that you can conceive of. "Arsenic in small portions mixed with their food, will generally prove effectual, if given in the first stages of the disease; and the best preventive medicines is ashes mixed with their salt; for hogs require as regular salting to keep them healthy and in good condition as do our cattle and horses."

Costiveness.—This is not an uncommon complaint of the confined and fattening hog, and is easily removed by the Epsom salts, or by five grains of calomel being given in a little of the animal's favorite food. It will be dangerous, however, to push the calomel beyond the second or third dose, for the hog is very easily salivated. The bowels having been well opened, a dose of the Alterative Powder (Recipe No. 2, p. 244) given every fourth day, will be very beneficial, and will hasten the fattening of the stye hog that exhibits any disposition to costiveness.

Sometimes, however, this costiveness is produced by—

Inflammation of the bowels.—Which is attended with considerable pain, heat and tenderness of the abdomen, with a quick pulse, and other symptoms of fever, and sometimes by fits and insensibility. The treatment should consist of copious bleeding, oily laxatives, clysters, warm fomentations to the abdomen, and if the animal is not too large, warm baths.

A London paper states that Dr. Forster of Findrassie, near Eglin, produced 104 bushels of chevalier barley from a single acre, by the application of electricity. The cost of the electric apparatus was £1 per acre, and it will last twenty years.

POULTRY.

Four golden rules or secrets. In your No. 18, "A Subscriber" wishes that some one "would supply a few plain and practical directions," or rules, which, agreeably to a former promise, I will attempt by giving the results of my experience, in or near towns in particular. My object is to instruct others and prevent cruelty. The economy of poultry may be classed under three heads; first, in their natural state, which is the department of the naturalist; second, in their domestic state in the country with a full range of the farm-yard and fields in which the poultry-keeper is concerned, for his profit; and third, in their artificial state in our near towns, in pens or yards, which will chiefly engage my attention in the present article. The best and cheapest method of feeding I must leave to be detailed by those who keep poultry in large quantities.

Shelter.—Fowls should always be kept in a dry, warm sheltered situation—a southerly aspect is to be preferred—for they enjoy and benefit greatly by the "warms in the sun," as well as requiring protection from its scorching rays, and a secure (storm) shed for rainy weather. The roosting-house and laying-house, if separate, should communicate, that early layers may have early access to the nests, and also communicate with the storm-shed for the fowls to run in in security if they should leave their roosts early in the morning. The nests should be numerous, either in boxes or baskets, not too deep but roomy, some situated high, some low, and as independent of each other as possible; each supplied with sweet, short, and soft straw, and a small nest-egg or two of chalk, the size of a pigeon's egg; If the nests be too deep they break the eggs in jumping in and out, and if the nests are not roomy, setting hens have no room to turn easily, and consequently break the eggs by not being able to get to them softly. They then eat the broken eggs, which gives them the habit of doing so at other times. They should roost warm at night, the perches high from the ground and of easy access by means of lower ones or ladders. The more light-some the house the better for promoting dry air and a free circulation; besides, fowls cannot see at all, being quite stupified and helpless in the dark, consequently the feather tribe always retire to roost before the sun goes down. Shutters to the glazed windows are unnecessary, except for better security, or to prevent fowls from leaving their roosts too early in the morning, to disturb ticklish neighbors, otherwise they come out almost as soon as daylight begins to appear. The feeding places, if under cover, so much the better, as a precaution for wet weather, and as far as possible removed from the nests, that the hens which happen to be laying at the time, or which may be setting, may not be disturbed and enticed off their nests and eggs at improper times. Being evidently natives of a warm country, they are scarcely yet perfectly acclimated in our variable and colder regions; although so widely diffused from times immemorial over the whole face of the globe, they have

retained a peculiar susceptibility of damp and chilliness, most of their disease arising from rheum, and cattarrh—catching colds.—The lungs of fowls are particularly tender; the finer the species, the less is it hardy. *Cleanliness.*—Fowls being cleanly by nature, thrive when regularly attended, but degenerate and sicken if neglected. In an artificial state of existence, they require to be supplied by art with what in nature they would obtain for themselves. For this purpose they should have a regular supply, in some convenient part of their shed, of sifted cinders daily to roll in and cleanse themselves, and which should be often changed. This precaution will keep them entirely free from vermin of any description. *Green food.*—This being quite as necessary for health as corn, to supply this requirement of nature, they should have daily a good supply of (sweet and fresh) green vegetables. Cabbage, lettuce are the best—turnip-tops and watercresses—but on no account any sour plants, which scour them as do spinach, the cuttings from grass-plats, and most sorts of garden seeds, as their instinct does not serve them to choose the wholesome from the noxious weeds, more than it does animals that happen to stray into a clover field, or happen to receive too large a quantity into their stables. I have known them to burst. Green food with fowls is an astringent, the very reverse of what vegetables are with us. This fact will not appear so surprising, when it is recollected that one takes them raw, and the other cooked. *A plentiful supply of clean water*, in daily well-cleansed vessels, and wholesome food. Frequent changes, and mixtures of corn, improve the appetite. Barley is decidedly their staple food in this country; Indian corn, or sometimes rice, mixed for a change. Oats occasionally, but in too large quantity, are apt to scour. Occasionally buckwheat and hempseed, as a stimulant, mixed with the barley for a change, are very beneficial, particularly whilst moulting. One meal may be composed of boiled or steamed potatoes, well mashed up whilst hot, with a portion of barley-meal, or oatmeal for a change, but which must be allowed to remain till cold. Books copying errors from one another, make a great mistake in advising food to be given hot. It is unnatural, they have no good cooks amongst them in their own state; and it is decidedly injurious to their digestive organs, except when fattening, when they are doomed soon to be killed for table. Feed twice a day at least, or three times if not to fattening; morning early, before the usual hour for laying, if possible; at noon, the noontide meal may be the potatoes as above directed, and before sunset—not later than 4 o'clock—that they may go to roost by twilight, or they will go without their food. Regularity greatly tends to health, and disturbance of any sort is very hurtful. Rice occasionally boiled in a cloth, greatly increases its bulk, and they are very fond of it. Reaumur says, that great economy is derived from steeping or boiling the barley, to increase its bulk, when they will be satisfied with one-third less quantity. But I cannot speak of this from my own experience, nor can I say that beneficial effects are produced by giving them much flesh, raw

or boiled. But fat, as advised in books, produces scourings; spiced or salted meats, and kitchen stuffs, are certainly pernicious to their stomachs. In fattening for the table, when they are not required to live long, or show fine feather, this may not be of any consequence. Will some of your practical correspondents enlighten us? They require in pens, or small yards in towns, to be well supplied with grit, sand, and small gravel; slaked lime, and old mortar pounded is very beneficial, and serviceable, in assisting to make the pen or yard dry. I will add to the above, that there is no economy in keeping poultry in towns, in small quantities, which is always exceedingly expensive, if well fed and taken care of; which, however, is compensated for, to those who wish to make certain that the eggs are quite fresh and newly laid. All calculations of expense must be erroneous, there being so many contingent expenses. As a source of trade, much depends upon rearing the best breeds, to be early in the season, laying in stock and store at proper times, having a ready sale for produce, and to "buy cheap, and sell dear." Diseases and cures will next come under consideration.

D. S. E.

Lambeth, June 1845.

[*London Gardener's Chronicle.*]

FOWLS.

If you keep your fowls shut up, instead of permitting them the enjoyment of their natural right of roaming abroad, you should see that they are supplied with all those "creature comforts" which they find when at liberty—as gravel pebbles, water, animal food, sand or ashes to dust themselves with, &c. They will pay you well for such provisions for their comfort—and if not provided for them, they are very unwise if they pay you anything. There is profit to be derived from fowls—but to get it, you must not slight them in attention to their wants.

[*N. E. Farmer.*]

LICE ON FOWLS, BIRDS, &C.

Fowls, chickens, and others of the feathered race often suffer much from vermin. There is a very small insect, much smaller than the common hen louse that is very destructive. Often causing the death of the hen on her nest, or causing her to leave her nest, often just before the time of hatching, to the great loss and disappointment of the owner.

These lice are not common where there are but few hens, or when they have a good range and roost in open situations. When they roost in a close place, these insects generally appear in the warm season. They are of a pale color when hungry, but when they have free access to hens, they are filled with blood and are of a dark color. When magnified they look like a wood tick.

They are very hard to kill, far more so than the more common hen louse. We have been told by two persons who have much experience in keeping poultry and birds, that whale oil soap, so valuable for destroying insects on vegetables, is the best remedy for lice on all the feathered tribe, even for the delicate Canary bird. The oil soap is used very strong, adding barely water enough to dissolve it, then take the fowl, chick, or bird by the bill, and souse him in all but his eyes and mouth, and rub the liquid into his feathers. It is said that it will not harm him.

White-washing every part of the hen-house, nests and all, has a good effect in preventing hen lice. When they are in the nests, they should be cleared out, brushed or washed, the old straw burnt, buried, or removed to some distance, and a fresh lot supplied. Strong scented herbs in nests have been recommended, and camphor too, but we have tried them in vain, as it regards the small lice or ticks. Lard or butter are often used to kill lice on chickens or hens, but we have found that dry snuff put on them in a few places causes them to scamper very quick, so that in an hour or two after not one will be seen, and this seems to have no unpleasant effect on the fowls. This was recommended some months since by one of our correspondents. Constant attention is necessary to guard against this evil, else fowls, birds and chickens will die before it is known that anything is the matter with them.

[*Boston Cultivator.*]

BLIND BRIDLES.

Look and reflect; use your own intellect.

Yes, use your thinking powers, friends, it was given you to use and not abuse. Blind bridles! truly named, surely. Art never invented a more fatal thing to the eyes of horses than when she devised this plan of depriving the horse of what nature intended he should enjoy. But, says one, how are blinders injurious to the horse? Because they gather dirt and heat around the eyes. Dirt irritates the eye and heat produces inflammation. These bridles so entrammel the eyes of the horse that he is compelled to be constantly straining them to see his way. The over exertion of the nerve brings on disease. Eyes were not made in vain. Had they been needless, the Creator would not have located them in the head. They were placed on the corner of the head that he might have the advantage of looking in different directions. Men, in the abundance of their wisdom, concluded the horse had too much sight, and they wished to curtail it; hence the origin of blind bridles. Think of this seriously, and you will abandon the use of so destructive an appendage. Remember, that blind bridles and diseased eyes are inseparably connected. Custom hoodwinks the senses of men, as much as blind bridles does the vision of horses. JOHN MADDOCK. *Farrier & Blacksmith.*

We are of opinion ourselves, that if the Creator had intended the eyes of horses to have been half blinded, that appendage would have been provided in a natural way.

[*Western Cultivator.*]

From the Washington Constitution.

SILK PLANT.

The following letter from D. Smith M'Cauley, Esq. our Consul at Tripoli, to Francis Markoe, Jr., the Secretary of the National Institute, will be read with much interest. He transmitted with it some of the vegetable silk, which in all probability, in our varied and wonderful soil and climate, will become a new article of commerce; and, like our cotton, a new and important source of wealth. This letter with a drawing of the silk plant, and descriptive remarks by the editor, appears in the July number of the Farmer's Library. It will be seen that some of the seed have been sent to Florida by the Hon. David Levy. We have not heard yet how the plant has grown there, but can scarcely doubt of its complete success in the rich soil and genial climate of Florida.* Should it succeed and become a great staple article like our cotton, what important consequences may we not expect to follow from its introduction:

U. S. CONSULATE.

Tropoli, 28th December, 1844.

Sir: I herewith transmit to the Institute, a small specimen of "Vegetable Silk," raised from a few seed that I received from Lucca, (Italy,) which originally came from Syria.

Without any instruction or knowledge of this plant, I sowed the seeds in pots in the month of March last. In May and June they obtained the height of six or eight inches, when I transplanted them into my garden, about eight inches apart, much to near, as my experience proves. In the month of August and September, they were in flower, and the pods commenced opening in October, the plants being from six to eight feet high, and though we have had the thermometer frequently as low as 42 degrees Fahrenheit, and the apricot and pomegranate trees, with the vine, have all shed their leaves, yet there remain several pods on the "Silk plant" which are still perfectly green, and shows no sign of suffering or cold. This, with some other proofs of the plant being hardy, induces me to believe and hope that it might be successfully cultivated in all our cotton-growing States, and should it become a staple commodity, no doubt the inventive genius of our countryman would soon discover the means of spinning it without the aid of the cotton fibre, which I am told they use in Syria to assist in spinning—their knowledge of the art not extending beyond the primitive distaff. The only information that I have acquired of this plant further than recounted above, is from the mouth of one of the "propagandi" established here, who has seen it growing in Syria, where, he tells me, it flourishes, and that the cultivation of a small field gives support to a family; that in the second and third years it is extremely productive. The plants grow to the height of ten to fifteen feet, and are generally separated from eight to ten feet from each other.

* We understand there is a plant now growing at the "Cattle Farm." and we hope a report of its qualities will be made to the Agricultural Society.—*Ed. So Ag.*

I also forward you by this occasion, the small quantity of seed of the plant, which the limited number I have raised enables me to spare, with the hope of sending a greater quantity next year, should the climate of our Southern States prove favorable to its culture, or should it be even otherwise interesting.

I beg you will distribute these seeds amongst those gentlemen of our "cotton growing States," who will take an interest in making an experiment of the cultivation. Permit me to mention two gentlemen to whom I would be pleased to have presented a small portion. Hon. Richard Donnel, of Newborn, N. C., and Hon. D. Levy, M. C. from Florida.

Fearing to trust to my botanical knowledge in giving a satisfactory description of the plant, I send a preserved specimen of a small branch of the plant, with the pods or cocoon attached, and also a rough sketch on paper of the same, which may serve in the event of the specimen itself not being properly preserved.

Very respectfully, sir, your most ob't. ser'vt.,

D. SMITH M'CAULEY.

To FRANCIS MARKOE, Jr., Esq.

Cor. Sec. of the National Institute, Washington.

THE FRUIT GARDEN.

Most fruit is not only nutritious, but a pleasing luxury. And the greater part when perfectly ripe and in a sound state, used with moderation, are not only unoffensive, but beneficial to health.

The art of raising and propagating good fruit trees and fruit, will be found plain and simple when rightly understood, and in no way difficult to all; but not having received that attention it deserves, fruit trees are in a great measure of casual growth, or the result of careless and unskillful management, and are stunted or diseased, and bear fruit that is of inferior quality, with wood of no value for timber or fuel. Trees when stunted from the seed can rarely be restored to that vigor they have lost; and if kept in nurseries in a crowded state, their growth will be retarded, until they become too old to be transplanted.

Trees are often grafted or budded when stunted or diseased, or when too old and a great number of grafts are stuck all over the trees without regard to their being placed on the leading or best placed limbs. No person can expect advantage from grafting or budding unless on young and middle sized trees, and such as are sound and vigorous.

Pruning and training are much neglected, or very improperly done, making trees of ill shape. Hollow trees will soon decline and rot down. The cause is from improper training and pruning, and leaving stumps on the trees; these rot off and leave a hole in the tree, which admits water, causes it to rot, and renders it hollow.

Pruning should always be done by cutting or sawing off limbs or branches smooth and even with the trunk, or main branches from which they are taken, the wound will then soon heal over and be covered with bark; which is prevented by stumps being left over, which, when dry the bark can never grow.

Planting an orchard or single tree, select only sound, vigorous and young trees.

Regulate all by pruning, so as to have full neat tops, suitably open to light and air; keep the earth as far as the roots extend, mellow and suitably rich; secure the trees well by stakes or boxes; water them a little in dry seasons, until they have taken root.

Trees may be propagated by grafting; by budding or inoculation; by cuttings or layers, and by seed.

The season for grafting is the spring, and may be performed from the middle of March until the first of June:

For budding, is also the spring, after the bark peels freely, with buds of the previous seasons growth.

Trees, cuttings, and layers, must be planted in the fall after frost, and before the ground becomes frozen; or in the spring after the frost is out, and before vegetation has advanced much, which are also proper times for pruning. Seed should be planted so late in the fall as to vegetate but little before the spring, so as to have the advantage of the whole season to grow in, to withstand the frost.

The apple and pear succeed well, either by grafting or budding.

The nectarine, peach and apricot, succeed by budding almost always, and but seldom by grafting.

DISEASED PEACH TREES.

Conversations of the New-York Farmer's Club.

Among the means that appeared in certain situations to have been successfully used to prevent the destruction of fruit trees, were lime, coal ashes, blacksmith's cinders, put about the trunks of trees, soot and hot water at the roots, when the earth is dug away—others had planted tansy around them, or twisted leaves of tobacco and fastened them around the bodies of the trees continued to flourish and bear for a long course of years. Facts were stated, showing that, in other places, some of the same means were applied and utterly failed. Mr. Travers stated that cold ashes had failed altogether. The efficacy of tobacco, however, was not contradicted by any one. Mr. Hopkins, whose letter was read at the last meeting, commending this article, has addressed another to the Club, enclosing a letter from Mr. Frazer, showing that a strong decoction of tobacco applied to the roots, after the ground had been dug away, not only destroyed the worms, but proved to be a fertilizer. Mr. Pike, of New Jersey, said: A sharp penknife or wire, is the best remedy I have discovered for the peach disease. The destroying grub insinuates himself under the bark of the tree. No ordinary

application can reach him. Tobacco juice alone will not do. My penknife has cut out thousands of them. After I have cut them out, I apply to the bottom of the tree a compost of lime, ashes, and cow dung; I add then tobacco. My diseased trees, treated in that way, have partly recovered their health. I have set out fifty thousand trees. For my part, I am convinced that this enemy insect is bred under the bark. I have taken out the young ones, that must have been hatched there. Guano has been mentioned as a vermifuge—but how can it get at the grub? Pulverised glass might answer, perhaps, for its particles are sharp. Oil is a good application—I have tried soft soap. Look at John J. Boyd's peach trees on Staten Island; he gives them whale oil, and their health is excellent. A member stated he had witnessed the good effects of the application of hard soap to peach trees. The soap was applied in April, June, and late in the fall. An orchard treated in this manner four years, was now very healthy, not a single tree had died during that period. Dr. Underhill said: Either take the worm out of the tree first, and then apply preventives of their renewed attacks, or first apply preventives; I have examined them well. The hole made by the worm in the bark is covered by the exuding gum, so that then nothing can enter the hole to destroy him. He seals up his hole in that way. It is a small white worm with a red head. I have watched it in all its stages. In two years it spins its cocoon, fastening it to the bark near its hole. I have taken the insects out of their cocoons. But there is something more in this matter of diseased peach trees. I think that the forced growth given to young trees by our nurserymen, causes their debility and premature decay. They are forced in rich soils; they grow five or six feet in a year; their sap is abundant; frost hurts them on that account. This forcing is carried to such an extent, that you almost make an annual of the tree—it becomes too tender, and therefore becomes the prey of the insect. I hope horticulturists will alter their method, and let us have a more moderate and natural growth of our nursery peach trees.

[N. Y. Far. & Mec.]

FRUIT TREES.

Instead of continuing the old practice of having alternate bearing and barren years for fruit trees, those who cultivate them would do well to note this fact. When young trees come into bearing for the first time, about the time the fruit is setting, if the most of it is taken off, and this continue for a few years in succession, leaving every year about the same quantity on the trees, they will, by the time they have become of sufficient size to be profitable, acquire the habit of bearing every.

[Columbia, So. Carolinian.]

EXPERIMENT ON PEACH TREES WITH TAR.

I promised to give you the result of an experiment which I had made with tar in preserving the peach and nectarine trees. It is so very simple and cheap, that all admirers of good fruit may have flourishing trees, and a chance for eating good fruit. As soon as the scion attains the size of a man's finger, which is generally about the first of autumn, remove the earth from the root, and deposite around the stock of the tree a half pint of soft tar, rubbing at the same time the body of the scion for six or eight inches above the surface with tar; then replace the dirt previously removed. This process must be repeated each succeeding year, say in the month of June, increasing the quantity of tar according to the growth of the tree. My own experience enables me to say, that this receipt is infallible.

GEO. C. DODSON.

Mayoning, Va., Jan. 31st, 1845.

[*Southern Planter.*]

BUDDING.

If stocks are young and very thirfty it will be in season to commence budding the first of August, for if they are set earlier they will be likely to start the present season, and then liable to be winter-killed. In this way some have suffered great loss for want of experience. If trees be rather old and of slow growth, they should be budded the latter part of July; but the better way is to put all stocks in a very thirfty condition before budding or grafting.

[*Boston Cultivator.*]

MENDING A TREE.

We saw at Isaac Frost's, Newton, a tolerable large apple tree, that had the bark eaten off all around by the mice, some years ago, and of course would have died, without some extra pains to save it. Mr. Frost set about a dozen scions in the tree, one end in the green bark and wood below, and the other above the wound. They all took at both ends and grew well, except one, which took only at the bottom, and is forming a little tree by itself. The scions are now about two inches in diameter and touching each other. The tree is in a flourishing condition.

Mr. Phinney, of Lexington, when we were at his house in the summer of 1836, showed us several cases in which he had practiced the above method, and with complete success. Query—Are we not indebted to him for the device?

[*N. E. Farmer.*]

A dry, cool, and airy room, free from all atmospheric changes, is the only place where fruits can be preserved for any length of time.

PLOUGHING CORN.

At a recent meeting of the Farmer's Club, we suggested that there might possibly be some philosophy in ploughing corn deep and cutting off many of the roots. A practical man thus writes in the *Western Gardener* :

Nineteen-twentieths of the *real* practical farmers, tilling corn on the alluvial bottoms and fertile uplands of the West, would not have a Cultivator in their corn fields, and would whip one of their young rustics as soon for shallow ploughing as they would for stealing a sheep. I have assisted in ploughing and hoeing corn on the Miami bottoms every summer since I was large enough to shoulder a hoe, or steer a plough; and my father's advice to me, when a boy, (and my experience ever since, proves it correct,) that in order to insure a good crop of corn, I must plough it oftener and *deeper* in a dry season than in a wet one, for this reason—that the oftener ground is stirred, the better it will hold moisture, and that the breaking off of the roots is but of minor consequence, if they are only *kept broke* off. Now for the result of this mode of tillage. An average crop, with us, upon the bottom land, is 60 and 70 bushels per acre, and upon the upland from 45 to 50; and in favorable seasons we have raised 110 bushels on the bottom, and 85 bushels per acre on the hill lands, planting the rows 4 feet apart in the bottom and 4½ feet on the hill land. The mystery consists in neglecting the corn when it needs the most ploughing, and letting the ground become hard and baked, and the corn roots of necessity have to extend themselves far and wide to gather their wonted nourishment, and then with the plough suddenly severing them.

CORN CULTURE.

In a conversation on this subject of late in the New-York Farmer's Club, Dr. Field stated the following to be his practice:—When the corn is out of the ground, the cultivator is passed through the rows, and it is hoed. This is repeated two or three times. The manure is not disturbed, nor the sod upturned by these operations so as to expose the gases generated, to the air. The cultivation is all shallow, so as not to disturb the small tender roots which feed the plants. His experience is opposed to hilling corn—it allows the hot sun to get too near the roots, which often run near the surface. He stated that he had raised more corn on two acres by this method than on ten by the old. The manure is spread on the surface. Dr. Underhill agreed with him in the belief that much injury was done to corn by ploughing up the manure, and by using the plough instead of the cultivator, thus breaking off the roots of the corn.

[*Prairie Farmer.*

The above opinions respecting the culture of corn are widely apart. Who will decide which is best.—*Ed. So. Ag.*

ECONOMICAL HINTS.

We extract the following sensible article from an old paper of 1816. It contains suggestions that will be found useful to farmers, especially when the crops are short. *Boston Cultivator.*

Remedy for Scarcity.—As the present scarcity of grain produces serious distress among the poorer class of people, and what is almost as painful, much greater wants among the domestic animals, it becomes an object of great importance to diminish the consumption, and to increase the nutriment of that consumed. Proper attention to the subject most certainly will reduce the use of grain one-half of the present quantity; and it behooves every man in good circumstances, to attend to it, in order that there may be more for market. If every one will seriously carry into operation the plan I have to propose for feeding, the price of grain will be so reduced, that the poor will be supplied on moderate terms; half-starved cows and horses will pass a comfortable winter; and some of the vile sharpers, speculating in articles of the first necessity, will be disappointed in their project of fattening on the necessities of the needy.

A most important point is, to suffer no animal to grain in its natural state. It should all go through the hands of the miller and the cook. The life of the grain resists the action of the stomach so long, that it passes into the bowels before decomposed; and from thence, in like condition, is expelled. Three quarts of oats or corn, ground fine, will yield more nourishment than three gallons not ground. [This may be true in case of horses.] And, of as much importance as grinding, is boiling the food with water, so as to make a thin mush. This mush, mixed up with hay or cut straw, will in a day or two be preferred by the animal to any other diet. One gallon of meal, added to two gallons of boiling water, and if not boiled with hay or straw, (which would be best,) poured on it and stirred up, and given at night, will, with the aid of a little hay in the day, preserve any horse or cow in good order. This mixture or mush, ought by all means to be boiled a few minutes, otherwise but little good will be done. This is confirmed by the following experiment, repeatedly made in England. A man, confined to a given quantity of raw materials, with abundance of water, would gradually decline in flesh; but with the same quantity of raw materials made into soup, would continue in good condition. The union of the water with the food by boiling, is like that in vegetation: it becomes a component part, and is converted into nourishment for the body, if not chemically united. Whether this reasoning be convincing or not, matters but little, since those to whom it is not satisfactory may rely upon the fact, that boiling meal before adding to it straw or hay, will make it go twice as far in the support of their stock. Surely for such an advantage, so easily obtained, every one ought to get over the natural indolence and common aversion to deviate from old habits.

Another considerable saving well worth attention, will be made by giving the animals all their meal food before dusk, and without

hay during the night. By eating the meal food at night, their stomachs convert the whole of it into nourishment. Grain given to animals in the day-time, when in exercise, is of little use, as it passes through them undigested. Hay in the day and grain at night, is the better practice, both for the owner and the brute. Giving hay at night, really injures animals that are worked in the day-time, by keeping them awake to feed, when they demand rest.

The last point I have to press, in the economizing of food, is the necessity of keeping stock *well sheltered*; that is, securing to them the benefit of their own warmth. It is a truth, indeed, that during their exposure to the irregularities of the season, they require twice the ordinary food for their nourishment and stimulation, and are subject to ten times as many fatal disorders as they otherwise would be. Man, their master, has taken them from a state where nature supplied their wants; and if he be not too much of a brute to feel for their hardships, he ought to be so much of a *man* as to supply what his interests dictate, as a requital to the animal for its loss of what nature designed for its welfare.

If by this plan of grinding and boiling the food of animals, the half of the grain be saved in the country, as most certainly it may, there will be little occasion for pressing the extension of the principle to *man*, by advising the eating of *mush* instead of bread, and *soup* instead of meat.

THOMAS EWELL.

Georgetown, 3d December, 1816.

A WORN OUT FIELD.

Those who have not reflected sufficiently on the subject, conclude that their field is *worn out*, as soon as it fails to produce the usual crop—without conceding that the idea is admissable, and intending at some future period to write an article corrective on that subject, I have used the words, *worn out*, as a mere introduction to a lesson on *wearing in*.

In the fall of the year, 1843, a gentleman, living at one of those old fields, made an experiment worth recording. The old field was entirely exhausted from incessant cultivation in corn, of its productive properties, so much so, that six acres of it would not produce enough grain to seed the land it grew on. There was six acres, which lay entirely level. This was inclosed by a good fence, and then broke up about full four inches deep with a turning plough. He then harrowed until it was thoroughly pulverized as possible without rolling. He then hauled out and spread upon it a coat of manure which had accumulated at an old gin. The coat was about one inch thick. This being done in December, he kept all stock out of it until in the spring at the proper time for planting cotton. He then broke it up again full four inches deep, and then harrowed it thoroughly, checked it off in squares of three feet, and planted of

the fresh petty-gulph seed, dropping four seeds in a hill. When the seed came up fully, he run small harrows between the rows and went over with hoes, dusting in a small quantity of fine earth around the young cotton, and thinning down to two stalks. When it had grown to have four or five leaves on a stalk, the small harrows were run through again, and the same process with the hoes, at the same time thinning down to one stalk. The next working was with small turning, half shovels, throwing the furrow to the hill and hoes levelling the dirt round the stalks. The fourth and last working was with the same tools and in the same way, except that there was care taken to have a good hill around each stalk. From this cultivation the weed grew something over six feet high, and the limbs locked from the ground up to near the top, and certainly there never could have been more bolls on the same weed matured. Off of this six acres, of an old, worn out field, by this mode of cultivation, this gentleman gathered into his gin eighteen thousand pounds of seed-cotton—3000 pounds to the acre. This land was on one of those high black-jack and short leaf pine ridges, which are poor enough when they are first cleared, so that there were none of those atmospheric advantages attending it which are supposed to contribute to the increase of crops on the swamp lands.

Planters, experiments are worth making, and it is so much easier to replenish old land than open new, that I do hope you will save your manure, and give that gentleman's experiment a fair test, in a small, if you are not prepared to do so in a large way. There is another experiment now in progress, the result of which is looked to with large expectations, and you shall have the benefit of all that can be learned by a

FARMER.

[*True Democrat.*]

THE TURNIP.

The turnip culture of America, compared with England, owing to the difference of climate, the latter being cool and humid, and the former hot and often very dry, must necessarily be very much less. The extreme cold of our winters will not allow of turnips being fed on the fields. We can, however, with profit, according as the season may turn out, grow a limited quantity of this root, which is not only desirable for the table, but valuable to help out our winter food for stock. This year our farmers had better sow a good deal of turnip and other root seeds, and millet, and corn broad-cast, or very closely cultivated in drills, for our long continued dry weather has shortened all our crops.

[*W. Farmer.*]

At a Meeting of the *Agricultural Society of South-Carolina*, held on Thursday, 21st August, the following officers were re-elected:

JOHN H. TUCKER, *President*,
JAMES ROSE, *V. President*.
FRAN. D. QUASH, *Cor. Sec.*

JOS. F. O'HEAR, *Secretary*.
ED. BARNWELL, Jr. *Trea'r.*

DISSOLUTION.

The undersigned have sold out their entire interest in the "Bommer Manure method" to Mr. George Bommer, of N. Y; in consequence of which the partnership heretofore existing between us, was dissolved on the 6th ultimo by mutual consent.

Our agents are requested to make up their accounts to the 6th of November, and forward them to Tho. M. Abbett, Baltimore. who is solely authorised to settle.

For any transactions after that date they will account to Mr. Bommer.

TH. M. ABBETT,
CHARLES BAER,
JOHN GOULIART.

Baltimore, Dec. 14, 1844.

N.B.—Charles Baer is the General Agent for Mr. Bommer in Georgia, and John Gouliart his General Agent for the State of Maryland.

BOMMER'S MANURE METHOD.

We have the satisfaction to announce to the Planters, Farmers and Gardeners of the vicinity of Charleston, that the Books with the Patent right, which Mr. Baer has caused to be sent on to the subscriber for disposal, have been received from Baltimore, and may be had of him on the terms before specified. Those who have bespoke them, will do well to call and obtain copies early. He also has received a report made to the Legislature of Maryland in favor of the method, which is daily gaining the public confidence whenever it is known. In the mean time we refer our readers to the last December and March Nos. of the Southern Agriculturist for some information on the subject.

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Mr. W. M. Shirley, Lexington, Geo.	1845	Mr. George W. Logan,	1844
Mr. James L. Rose,	1843, '44.	Dr. Geddings,	1845

TO OUR READERS.

We call the attention of our Patrons to the *Experiments of Marling*, by FRANCIS S. HOLMES, Esq., which were submitted to the State Agricultural Society at their last annual meeting, and published as an Appendix to the Report made by Mr. Tuomey, State Geological Surveyor. It will be found highly interesting to those who are now experimenting with marls; and we hope will call into action many dormant experiments now unknown to the public, but which would be of benefit to some if communicated for publication.

The rest of our Number will be found to contain many highly useful and important Agricultural articles, for which we refer to the table of Contents.

Persons at a distance indebted for the *Southern Agriculturist*, will please forward their money by mail, in the best bills they can obtain.

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